

CALIFORNIA STANDARDS TEST

INTEGRATED MATHEMATICS 1

(Blueprint adopted by SBE 10/9/02 and applies to subsequent California Standards Tests)

CALIFORNIA CONTENT STANDARDS	Standards Assessed	%
Algebra I	45 items	69%
Standard Set 1.0 Students identify and use the arithmetic properties of subsets of integers and rational, irrational, and real numbers, including closure properties for the four basic arithmetic operations where applicable:		
1.1 Students use properties of numbers to demonstrate whether assertions are true or false.	✓	
2.0* Students understand and use such operations as taking the opposite, finding the reciprocal, taking a root, and raising to a fractional power. They understand and use the rules of exponents.	✓	
4.0* Students simplify expressions prior to solving linear equations and inequalities in one variable such as $3(2x-5) + 4(x-2) = 12$.	✓	
5.0* Students solve multistep problems, including word problems, involving linear equations and linear inequalities in one variable and provide justification for each step.	✓	
6.0* Students graph a linear equation, and compute the x- and y- intercepts (e.g., graph $2x + 6y = 4$). They are also able to sketch the region defined by linear inequality (e.g., they sketch the region defined by $2x + 6y < 4$).	✓	
7.0* Students verify that a point lies on a line given an equation of the line. Students are able to derive linear equations by using the point-slope formula.	✓	
8.0 Students understand the concepts of parallel lines and perpendicular lines and how those slopes are related. Students are able to find the equation of a line perpendicular to a given line that passes through a given point.	✓	
10.0* Students add, subtract, multiply, and divide monomials and polynomials. Students solve multistep problems, including word problems, by using these techniques.	✓	
11.0 Students apply basic factoring techniques to second- and simple third-degree polynomials. These techniques include finding a common factor for all terms in a polynomial, recognizing the difference of two squares, and recognizing perfect squares of binomials.	✓	
12.0* Students simplify fractions with polynomials in the numerator and denominator by factoring both and reducing them to the lowest terms.	✓	
13.0* Students add, subtract, multiply, and divide rational expressions and functions. Students solve both computationally and conceptually challenging problems by using these techniques.	✓	
14.0* Students solve a quadratic equation by factoring or completing the square.	✓	

✓ Standard assessed on the California Standards Test

*Key standards (Mathematics Framework for California Public Schools) comprise a minimum of 70% of the test.

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19.0* Students know the quadratic formula and are familiar with its proof by completing the square.	✓	
20.0* Students use the quadratic formula to find the roots of a second-degree polynomial and to solve quadratic equations.	✓	
Standard Set 25.0 Students use properties of the number system to judge the validity of results, to justify each step of a procedure, and to prove or disprove statements:		
25.1 Students use properties of numbers to construct simple, valid arguments (direct and indirect) for, or formulate counterexamples to, claimed assertions.	✓	
25.2 Students judge the validity of an argument according to whether the properties of the real number system and the order of operations have been applied correctly at each step.	✓	
25.3 Given a specific algebraic statement involving linear, quadratic, or absolute value expressions or equations or inequalities, students determine whether the statement is true sometimes, always, or never.	✓	
Geometry	20 items	31%
6.0 Students know and are able to use the triangle inequality theorem.	✓	
8.0* Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.	✓	
9.0 Students compute the volumes and surface areas of prisms, pyramids, cylinders, cones, and spheres; and students commit to memory the formulas for prisms, pyramids, and cylinders.	✓	
10.0* Students compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.	✓	
11.0 Students determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.	✓	
12.0* Students find and use measures of sides and of interior and exterior angles of triangles and polygons to classify figures and solve problems.	✓	
17.0* Students prove theorems by using coordinate geometry, including the midpoint of a line segment, the distance formula, and various forms of equations of lines and circles.	✓	
INTEGRATED 1 TOTAL	65 items	100%

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